

Improved Compound for Treatment of Diuresis (Case 2022)

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Technology description

Brief Description:

Currently, more than 5.8 million Americans are affected by congestive heart failure (CHF). Furosemide, a loop diuretic widely prescribed to CHF patients, rids the body of excess water, reduces blood pressure and mobilizes edemas. However, due to the narrow window of furosemide absorption, occurring in the proximal gastrointestinal tract, only immediate release oral formulations are clinically available.

Comparisons of bolus versus continuous administration of furosemide in intravenous settings demonstrate that continuous administration at lower concentrations produces greater diuretic efficiency and reduces subsequent hospitalization rates in patients experiencing severe CHF. An oral, controlled-release product that could produce a similarly favorable outcome would be highly desirable. The current invention describes formulations for oral, controlled release furosemide that reduce the rapid spike in diuresis associated with immediate release formulations of furosemide while maintaining cumulative urine output. A once daily oral furosemide formulation has been optimized that demonstrates gradual, rather than punctuated, diuresis without sacrificing the therapeutic goal of increasing overall urine output per dose.

The implicated primary market is pharmaceutical – therapeutics (human and animal) in the specialized field of cardiology, cardiovascular, pulmonary and allergy medicine with application as a diuretic in congestive heart failure (in combination with other drugs), allergic reactions, and edema (pulmonary and otherwise). A second market, albeit controversial, is in veterinary pharmaceuticals for controlling racehorse nosebleeds.

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